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the upper eyelid. Diameter of tympanum about one-half the diameter of eye. First finger extending slightly beyond second. Inner metatarsal tubercle slightly compressed, less than one-half its distance from tip of inner toe. A small outer metatarsal tubercle. Tibio-tarsal joint of extended hind limb reaches the nostril or beyond. A glandular dorso-lateral fold. A dark temporal spot. Color above pale clay; a \wedge shaped dark marking between the shoulders; limbs transversely barred; underside whitish.

Two female specimens from Yevsyeyevka (ЕВСЬЕЕВКА), Coast Province, East Siberia. Coll. N. Ikonnikov. May 20, 1910. Dimensions respectively in mm. Total length, 38,33; width of head, 13,11; fore limb, 27.5, 21.5; hind limb, 66, 52; tibia, 21, 17; inner toe, 4.5, 3; inner metatarsal tubercle, 2, 1.4.

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NOTES ON THE ANDEAN FROG, *TELMATOBIUS CULEUS* (GARMAN).

During six months' fishing in the Andean highlands⁴, the writer frequently came into contact with *Telmatobius culeus*. It was often seen in the water and often taken unexpectedly with the seine. There was ample opportunity to verify the rather full ecological observations of the describer,⁵ and to add to them.

In agreement with Garman's somewhat hesitant conclusion, this frog was never observed to emerge from the water; was never found out of water; was never seen rising to the surface to breathe; and never seen swimming more than a few inches from the bottom. When approached by boat or *balsa* it swims to the nearest cover, unless the approach is made with

⁴ As a member of the Irwin Peruvian Expedition of Indiana University and traveling fellow of the University of Illinois.

⁵ Agassiz, Alexander, and Garman, S. W.; Exploration of Lake Titicaca; I. Fishes and Reptiles, by S. W. Garman; Bull. Mus. Comp. Zool. Harvard, Vol. III, No. 11; 1876; Plate I.

the greatest caution. It was a startling and grotesque spectacle to observe this squatting monster slowly and motionlessly take form where apparently there had been nothing before upon the oozy bottom. Also the inhabitants report, as they did to Garman, that the animal never leaves the water. There can be little doubt that it is wholly aquatic. Garman suggests that it may be more active at night. This is possible.

Air is always found in the lungs of those dissected. But at any rate it is not greatly dependent upon pulmonary respiration. The cutaneous respiration is apparently adequate. Garman describes and figures the baggy skin, but does not mention the extremely vascular character of the same. The cutaneous arteries and veins not only form a network more intricate than in most frogs, but are relatively larger than in others. The writer distended the lungs of a *culeus* artificially, and found them scarcely so large as those of a toad which was not one-third its size. The mean temperature of its habitat is low. This fact together with its totally aquatic habit and its inactivity means a lower metabolic rate and a lessened demand for oxygen.

Garman has evidently accepted too confidently the reports of the inhabitants with regard to the bird enemies of this frog. In the writer's opinion birds rarely feed upon it. Several species of birds which were said to eat frogs were killed and examined for their parasites and stomach contents. In no case was there any evidence to corroborate the observations of the natives. They state that the *pajaro bobo* (a heron) feeds exclusively upon frogs. The examination of stomachs never revealed any frog remains. Several reputed predatory bird species were found to live wholly upon plant material.

When held, dangled by a string, or teased, *culeus* emits great quantities of a sticky, milky secretion. The creases of the skin become filled with it. In all

probability this has an offensive taste, and is protective. Furthermore, in the littoral of lakes one finds side by side the maximum of both bird and frog populations.

Garman records as the food of the species: worms, crustacea, and molluscs. The writer found few of the first-named. Amphipods were very commonly obtained in stomach analyses and often snails.

The tongue, though free posteriorly, is not much elongated nor forked, and is ill-adapted for seizing terrestrial prey. No land forms were ever found among the stomach contents. Aquatic insects were frequently seen, but never terrestrial. Several times tadpoles, large and small, were found, and a number of fish, including an *Orestias* four inches in length.

No *culeus* were to be seen on the markets of the region of Lake Titicaca. No indigines were ever observed hunting them. No one despite considerable inquiry reported that they are edible. Hence it seems safe to conclude that in this region they are rarely if ever used as food. But at and about Lake Junin, five-hundred miles northward, the contrary is the case as regards the closely related *Batrachophrynus*. Market hunters search for water frogs of this latter genus in the reedy inlets of Lake Junin, and take them skilfully by means of long, crude gigs of their own contrivance, operating from *balsas*. The frogs are marketed at Junin, and some of them are dispatched to Lima and Cerro de Pasco. It is possible that their use here for food originated with foreigners, including Americans.

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A NOTE ON THE RING-NECKED SNAKE IN WISCONSIN.

Until recent years the ring-necked snake, *Diadophis punctatus* (Linn.), was not known north and west of Illinois and the southern peninsula of Michi-